

Appl. No. 10/798,299

Reply to Office Action of: March 23, 2005

**REMARKS**

Applicants wish to thank the Examiner for reviewing the present application.

Applicants advise that a change of correspondence address is being filed concurrently with this response. Applicants also advise that the attorney docket number for the present application has changed, and the new attorney docket number is noted above. Applicants kindly request that the Office amend its records to indicate same.

**Amendments to the Specification**

The specification has been amended to correct various typographical errors. No new matter is believed to be added by way of these amendments.

**Amendments to the Claims**

Claim 1 is amended to include the subject matter of claim 2. Accordingly, Applicants hereby cancel claim 2.

Claim 3 is amended to correct its dependency, in view of the amendments to claim 1.

Claim 15 is amended to correct its dependency, namely to depend on claim 14.

Claim 16 is amended to correct its dependency, namely to depend on claim 5.

Claim 20 is amended to correct a typographical error.

Claim 21 is amended to correct several typographical errors, and to indicate that the succession of scans are performed while substantially maintaining the predetermined position.

No new matter is believed to be added by way of these amendments.

**Claim Objections**

Claims 15 and 16 have been objected to under 37 CFR §1.75(c) as being of improper dependent form for failing to further limit the subject matter of a previous claim. Claim 15 is amended to depend on claim 14 as suggested by the Examiner and indicated above. Claim 16 is amended to depend on claim 5, since claim 16 adds a signal indicative of movement of the

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transducer head relative to the drum, and the transducer head and drum are introduced in claim 5.

Therefore, claims 15 and 16 are believed to comply with 37 CFR §1.75(c).

**Claim Rejections – 35 §112, second paragraph**

Claim 16 is rejected under 35 U.S.C. §112, second paragraph, as being indefinite. Claim 16 is amended as indicated above, which is believed to be definite and thereby comply with 35 U.S.C. §112, second paragraph.

**Claim Rejections – 35 U.S.C. §102**

**Claims 1-7 and 10-20: Haddad**

Claims 1-7 and 10-20 have been rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,475,150 to Haddad.

Claim 1 is amended as indicated above, to include the subject matter of claim 2, namely the provision of a chamber of the imaging apparatus to receive a portion of a patient to be imaged, and an aperture in the support table to permit positioning of the portion in the chamber.

Amended claim 1 is directed to a medical imaging system comprising a patient support surface and an imaging apparatus. The imaging apparatus has a chamber to receive a portion of the patient as noted above, and has a support table located within the support surface. The support table has an aperture to permit positioning of the portion in the chamber. The support table is adjustable relative to the support surface to be located above the surface and thereby engage a portion of the patient.

The provision of an adjustable support table enables, for example, a technician or other user of the imaging system to adjust the table for the comfort of the patient, and to provide a better fit around the breast. Such an arrangement accommodates different patients and different positions. From this arrangement results a further benefit of enabling a more accurate scan, since the breast can be more easily positioned in the correct orientation. Yet another benefit from such a provision is in allowing the breast to be positioned in a consistent manner by reducing deformation and other uncomfortable positions that may be hard to repeat, and undesirable to the

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patient.

Haddad teaches an ultrasonic imaging system having a table and an embedded imaging apparatus as shown in Figure 1. The imaging apparatus is not adjustable, nor is its upper surface within the table. Therefore, Haddad does not teach an adjustable table, nor a support table located within a support surface as required by amended claim 1, and as such, Haddad cannot anticipate amended claim 1.

Claim 2 is cancelled, and claims 3 and 4 are either directly or indirectly dependent on claim 1, and as such are also believed to distinguish over Haddad.

Claim 5 is directed to an ultrasound scanner that, in part, requires a transducer head that is rotatable with the drum and displaceable relative to the drum along an axis parallel to the axis of rotation of the drum. The provision of a transducer head being displaceable relative to the drum enables the imaging system to scan in, e.g., a vertical direction without disrupting the position of the drum, which assists in maintaining the position of the portion being scanned, e.g., a pendant breast.

Haddad does not teach such an arrangement. In fact, Haddad teaches a pair of transducer heads that are fixed in a vertical position with respect to the drum thereby inhibiting relative movement (see Figure 3A and col. 4, lines 11-23). Accordingly, Haddad does not teach a transducer head as recited in claim 5. Therefore, Haddad cannot anticipate claim 5.

Claims 6-7 and 10-20 are either directly or indirectly dependent on claim 5, and as such are also believed to distinguish over Haddad.

In summary, Applicants respectfully submit that Haddad cannot anticipate claims 1-7 and 10-20.

#### Claims 1-4: Wake

Claims 1-4 have been rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,952,664 to Wake et al.

Wake teaches a laser imaging apparatus having a patient table with a recessed chamber to receive a pendant breast as shown in Figure 1.

As noted above, claim 1 requires an adjustable support table to adjust the positioning of the chamber to fit different patients. Wake does not teach such a provision. In fact, Wake

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teaches a chamber formed within the patient table and is not part of a separate structure. Accordingly, Wake does not teach a support table that is adjustable, as recited in claim 1. Therefore, Wake cannot anticipate claim 1.

Claim 2 is cancelled, and claims 3-4 are either directly or indirectly dependent on claim 1, and as such are also believed to distinguish over Wake.

Claims 1-7 and 10-21: Johnson

Claims 1-7 and 10-21 have been rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,222,274 to Johnson.

Johnson teaches a scanning apparatus that utilizes a carriage rotatable on a base, and around a stationary drum (col. 5, line 28). The drum is recessed from an upper surface and can receive a pendant breast. A transducer array rotates on the carriage about the drum and independent thereof. The transducer array can move vertically along a set of rails, with respect to the drum. The scanning apparatus is fixed, and thus not adjustable relative to a patient support surface.

Regarding claim 1, Johnson does not teach an adjustable support table to adjust the positioning of the chamber to fit different patients, as recited in claim 1. In fact, Johnson is entirely silent as to such a provision. Therefore, Johnson cannot anticipate claim 1.

Claim 2 is cancelled, and claims 3-4 are either directly or indirectly dependent on claim 1, and as such are also believed to distinguish over Johnson.

Regarding claim 5, Johnson does not teach a rotatable drum, nor a transducer head that rotates with the drum as recited in claim 5. On the contrary, as indicated above, and shown in Figure 1, Johnson teaches a fixed or stationary drum, and a transducer array that moves about the drum, independent thereof. Therefore, Johnson cannot anticipate claim 5.

Claims 6-7 and 10-20 are either directly or indirectly dependent on claim 5, and as such are also believed to distinguish over Johnson.

Claim 21, in part, requires locating a portion of a patient on a scanner in a predetermined position to permit acquisition of data in a repeatable manner, performing a succession of scans while maintaining the predetermined position, and transferring the scans to a remote location and comparing time separated scans to determine changes in a medical condition. Such steps enable

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a user to monitor a medical condition, since the method lends itself to being repeatable.

Although Johnson teaches a medical scanning apparatus, Johnson does not teach, nor even suggest locating a portion in a predetermined position, maintaining that position during a succession of scans, nor comparing time separated scans to determine changes in a medical condition. Therefore, Johnson cannot anticipate claim 21.

In summary, Applicants respectfully submit that Johnson cannot anticipate claims 1-7 and 10-21.

### **Claim Rejections – 35 U.S.C. §103(a)**

Claims 8 and 9 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Haddad in view of US Patent No. 6,353,576 to Garlick et al.

Claims 8 and 9 are indirectly dependent on claim 5. The Examiner believes that Haddad teaches the subject matter of claims 5 and 6, but does not teach specific angles of propagation as required by claims 8 and 9. Applicant has shown above that Haddad does not teach a transducer head that rotates with the drum and displaced relative to the drum along an axis parallel to the axis of rotation. Accordingly, Garlick must not only teach the subject matter of claims 8 and 9, but also what is missing from Haddad regarding claims 5 and 6.

Garlick teaches an ultrasonic hologram and imaging process that forms phase and amplitude information of the hologram in order to be insensitive to environmental vibrations. However, Garlick does not teach a transducer head that rotates with a drum, nor a transducer head that is displaceable relative to the drum as recited in claim 5.

Accordingly, Garlick does not teach what is missing from Haddad. Therefore, for at least that reason, claims 8 and 9 are believed to clearly and patentably distinguish over the combination of Haddad and Garlick.

### **Summary**

In view of the foregoing, Applicants respectfully submit that claims 1 and 3-21 submitted herewith, clearly and patentably distinguish over the prior art cited by the Examiner, and as such, are in condition for allowance.

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Applicants request early reconsideration and allowance of the present application.

Respectfully submitted,

  

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